

*Amendments to the Claims*

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) A modem, comprising:

a carriergroup receiving means configured to receive signal-to-noise ratio (SNR) parameters relating to a plurality of carriers;

a carriergrouping means configured to group the plurality of carriers into a plurality of dynamically variable size carrier groups based on the SNR parameters, to determine a ~~first~~ carriergroup SNR parameter for each of the plurality of dynamically variable size carrier groups, the ~~first~~ carriergroup SNR parameter being a worst case SNR parameter from among the SNR parameters corresponding to the plurality of carriers within each of the plurality of dynamically variable size carrier groups, and to determine ~~[[a]] second~~ carriergroup bitloading and gain parameter parameters for each of the plurality of dynamically variable size carrier groups based upon the worst case SNR parameter ~~first-carriergroup-parameter~~ for each of the plurality of dynamically variable size carrier groups; and

a carriergroup transmitting means configured to transmit at least one message including the ~~plurality of~~ carriergroup bitloading and gain parameters ~~for each of the plurality of dynamically variable size carrier groups, and the at least one dynamically variable size carrier group.~~

- 2-6. (Cancelled)

7. (Previously Presented) The modem of claim 1, further comprising:

means for using the at least one message to set up a tone encoder in a far-end modem.

8. (Currently Amended) A method for grouping a plurality of carriers in a DMT communication system, comprising:

grouping the plurality of carriers used for communication in the DMT communication system into a plurality of dynamically variable size carrier groups;

determining a plurality of carriergroup parameters for each of the plurality of dynamically variable sized carrier groups, the plurality of carriergroup parameters including a ~~first carriergroup parameter~~ signal-to-noise ratio (SNR) parameter being a worst case SNR parameter relating to the plurality of carriers within ~~each-of the~~ [[the]] plurality dynamically variable size carrier groups; group and a ~~second carriergroup parameter~~ bitloading and gain parameters being based upon the ~~first carriergroup parameter~~ SNR parameter for ~~each-of-the-plurality-of~~ the dynamically variable size carrier groups group;

using the plurality of carriergroup parameters to dynamically set up a tone encoder; and

sending at least one message using the tone encoder, the at least one message including the plurality of carriergroup parameters.

9-13. (Cancelled)

14. (Previously Presented) The method of claim 8, further comprising:

setting up a tone encoder in a far end modem using the at least one message.

15. (Previously Presented) A method for grouping a plurality of carriers in a DMT communication system, the DMT communication system including a near end and a far end modem, comprising:

determining at least one dynamically variable sized carrier group from the plurality of carriers used for communication in the DMT communication system;

determining a worst case carriergroup signal-to-noise ratio (SNR) for the plurality of carriers within the at least one dynamically variable sized carrier group;

determining a carriergroup bitloading and a carriergroup gain for the plurality of carriers within the at least one dynamically variable sized carrier group based on the worst case carriergroup SNR;

using the carriergroup bitloading and the carriergroup gain to dynamically set up a tone encoder in the far end modem; and

using the carriergroup bitloading and the carriergroup gain to transmit messages from the far end modem to the near end modem using the tone encoder.

16 - 18. (Cancelled)

19. (Previously Presented) The method of claim 15, wherein the communication system is a VDSL system.

20. (Currently Amended) A modem for grouping a plurality of carriers in a DMT communication system coupled to a far-end modem via a transmission channel, comprising:

Reply to Office Action of July 21, 2010

a carriergrouping means configured to determine group the plurality of carriers into a plurality of dynamically variable size carrier groups, to determine a first carriergroup signal-to-noise ratio (SNR) parameter for each of the plurality of dynamically variable size carrier groups, the first carriergroup SNR parameter being a worst case SNR parameter relating to the plurality of carriers within each of the plurality of dynamically variable size carrier groups, and to determine a second carriergroup bitloading and gain parameter parameters for each of the plurality of dynamically variable size carrier groups based upon the first carriergroup SNR parameter for each of the plurality of dynamically variable size carrier groups; and groups, the carriergrouping means including:

a tone decoder coupled to the transmission channel configured to transmit the messages, the tone decoder being dynamically set up based upon the first and the second carriergroup parameters; and

a carriergroup transmitting means configured to transmit messages including each of the first and the second carriergroup bitloading and gain parameters to the far-end modem via the transmission channel to enable the far-end modem to send and receive messages using the plurality of dynamically variable size carrier groups.

21. - 25. (Cancelled)

26. (Previously Presented) The modem of claim 20, wherein the messages are used to set up a tone encoder in the far-end modem coupled to the transmission channel.

27. - 28. (Cancelled)

29. (Currently Amended) The method of claim [[1]] §, further comprising:

setting up a tone encoder using the first carriergroup parameter bitloading and gain parameters and the second-carriergroup parameter.

30. - 31. (Cancelled)